

CLAIMS

What is claimed is:

1. A method for providing an automatically updated timestamp for database systems, comprising:
 - 5 (a) providing at least one table in the database system; and
 - (b) providing a hidden timestamp column in the at least one table in the database system, wherein the hidden timestamp column indicates a last time a corresponding row in the at least one table was modified.
- 10 2. The method of claim 1, further comprising:
 - (c) receiving a query to obtain a timestamp value from the hidden timestamp column, wherein the query calls the timestamp column by name.
- 15 3. The method of claim 1, further comprising:
 - (c) providing a page timestamp for a data page in the database system, wherein the page timestamp indicates a last time at least one row of the data page was modified.
- 20 4. The method of claim 3, wherein the page timestamp comprises an update timestamp for the data page recorded on disk or in a buffer pool.
5. The method of claim 3, wherein the page timestamp is converted from a log relative byte address associated with the last time at least one row of the data page was modified.

6. A method for providing an automatically updated timestamp for database systems, comprising:

- (a) providing at least one data page in the database system, the at least one data page comprising a plurality of rows of data; and
- 5 (b) providing a page timestamp for the at least one data page, wherein the page timestamp indicates a last time at least one of the plurality of rows was modified.

7. The method of claim 6, wherein the page timestamp comprises an update timestamp for the at least one data page recorded on disk or in a buffer pool.

10 8. The method of claim 6, wherein the page timestamp is converted from a log relative byte address associated with the last time at least one of the plurality of rows was modified.

15 9. A computer readable medium with program instructions for providing an automatically updated timestamp for database systems, comprising instructions for:

- (a) providing at least one table in the database system; and
- (b) providing a hidden timestamp column in the at least one table in the database system, wherein the hidden timestamp column indicates a last time a corresponding row in the at least one table was modified.

20 10. The medium of claim 9, further comprising instructions for:

- (c) receiving a query to obtain a timestamp value from the hidden timestamp

column, wherein the query calls the timestamp column by name.

11. The medium of claim 9, further comprising instructions for:

(c) providing a page timestamp for a data page in the database system, wherein

5 the page timestamp indicates a last time at least one row of the data page was modified.

12. The medium of claim 11, wherein the page timestamp comprises an update

timestamp for the data page recorded on disk or in a buffer pool.

10 13. The medium of claim 11, wherein the page timestamp is converted from a log

relative byte address associated with the last time at least one row of the data page was

modified.

14. A computer readable medium with program instructions for providing an

15 automatically updated timestamp for database systems, comprising instructions for:

(a) providing at least one data page in the database system, the at least one data

page comprising a plurality of rows of data; and

(b) providing a page timestamp for the at least one data page, wherein the page

timestamp indicates a last time at least one of the plurality of rows was modified.

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15. The medium of claim 14, wherein the page timestamp comprises an update

timestamp for the at least one data page recorded on disk or in a buffer pool.

16. The medium of claim 14, wherein the page timestamp is converted from a log relative byte address associated with the last time at least one of the plurality of rows.

17. A system, comprising:

5 at least one table in a database system; and

a hidden timestamp column in the at least one table in the database system, wherein the hidden timestamp column indicates a last time a corresponding row in the at least one table was modified.

10 18. The system of claim 17, wherein the timestamp value from the hidden timestamp column can be obtained with a query which calls the timestamp column by name.

15 19. the system of claim 17, further comprising a page timestamp for a data page in the database system, wherein the page timestamp indicates a last time at least one row of the data page was modified.

20. The system of claim 19, wherein the page timestamp comprises an update timestamp for the data page recorded on disk or in a buffer pool.

20 21. The system of claim 19, wherein the page timestamp is converted from a log relative byte address associated with the last time at least one row of the data page was modified.

22. A system, comprising:

at least one data page in a database system, the at least one data page comprising a plurality of rows of data; and

a page timestamp for the at least one data page, wherein the page timestamp indicates a last time at least one of the plurality of rows was modified.

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23. The system of claim 22, wherein the page timestamp comprises an update timestamp for the at least one data page recorded on disk or in a buffer pool.

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24. The system of claim 22, wherein the page timestamp is converted from a log relative byte address associated with the last time at least one of the plurality of rows was modified.